

CLAIMS

1. Apparatus for encoding an output video stream with interactive triggers comprising:

(a) a plurality of graphic sources operative to supply a plurality of graphics;

(b) a video switch having an output connection, said video switch being connected to said graphic sources, said video switch being adapted to select a set of one or more of said graphic sources and operatively connect the set of selected graphic sources to said output connection so that the graphics supplied by the one or more graphic sources in said set will be included in an output video stream at said output connection and will be visible when said output video stream is viewed in a video receiver;

(c) an inserter having a trigger input, said inserter being connected to said video switch so that an interactive trigger supplied to said trigger input will be inserted in said output video stream;

(d) a trigger source operative to supply data specifying interactive triggers such that each said trigger is associated with one or more of said graphic sources;

(e) a gateway circuit connected to said video switch so that said gateway circuit receives information from said video switch representing the identity of the set of graphic sources connected to said output channel, said gateway circuit being operative to automatically supply one or more triggers associated with the one or more graphic sources in said set to the trigger input of the inserter.

2. Apparatus as claimed in claim 1 wherein said plurality of graphic sources include one or more memories holding one or more specification units, at least some of said specification units including graphic data specifying one or more graphics and trigger data specifying one or more triggers, at least one of said graphic sources being operative to retrieve one of said specification units and supply the graphics specified by

the retrieved specification unit, and to supply the data specifying the one or more triggers specified by the retrieved specification unit, whereby said graphic sources also serve as said trigger source.

3. Apparatus as claimed in claim 2 wherein said at least one of said graphic sources is operative to supply the trigger data specified by a specification unit while such graphic source is supplying the graphics specified by the same specification unit.

4. Apparatus as claimed in claim 2 wherein the graphic data in at least some of said specification units includes coordinate data specifying location of a graphic within a displayed image and wherein the trigger data in at least some of said specification units includes (i) said coordinate data or (ii) an instruction to incorporate said coordinate data in a trigger.

5. Apparatus as claimed in claim 4 wherein the trigger data in at least some of said specification units includes an instruction to incorporate said coordinate data in a trigger, and wherein said gateway circuit is operative to incorporate the coordinate data in a trigger responsive to such instruction.

6. Apparatus as claimed in claim 2 wherein the trigger data in at least some of said specification units includes an instruction to incorporate data from the graphic data in such specification unit and wherein said gateway circuit is operative to incorporate such data in a trigger responsive to such instruction.

7. Apparatus as claimed in claim 2 wherein each said specification unit is a single data file.

8. Apparatus as claimed in claim 2 wherein the graphic data in at least some of said specification units includes text data, and wherein each said graphic source is operative to display a graphic including text corresponding to the text data.

9. Apparatus as claimed in claim 1 wherein said video switch is manually operable to select graphic sources for inclusion in said set, and to vary such selection, as commanded by a human operator.

10. Apparatus as claimed in claim 1 wherein said graphic sources include a source of live video.

11. A method of providing a video output stream with interactive triggers comprising:

(a) providing a plurality of graphics through a plurality of graphic sources;

(b) providing trigger data specifying a plurality of interactive triggers so that the data specifying each such trigger is associated with one of said graphic sources and thereby associated with the graphic supplied by that source;

(c) selecting a set including one or more of said graphic sources and incorporating the graphics supplied by the selected graphic sources in an output video stream;

(d) responsive to the selection of step (c), automatically selecting from the trigger data a set of selected trigger data associated with the set of graphic sources; and

(e) inserting the triggers specified by said selected trigger data in said output video stream so that the trigger associated with each graphic is inserted in the output video stream in a predetermined time relationship with that graphic.

12. A method as claimed in claim 11 further comprising varying the set of graphic sources in step (c), said set of selected trigger data in step (d) varying in response to said varying set of graphic sources.

13. A method as claimed in claim 12 wherein said step of providing a plurality of graphics includes providing live video.

14. A method as claimed in claim 12 wherein said step of varying the set of graphic sources in step (c) includes manually controlling the selection of graphic sources.

15. A method as claimed in claim 11 wherein said steps of providing graphics and trigger data include operating at least one graphic source to retrieve a specification unit incorporating graphic data specifying one or more graphics and trigger data specifying one or more triggers, to supply the graphic specified in the specification unit and to supply the trigger data incorporated in the specification unit.

16. A method as claimed in claim 15 wherein said step of operating at least one graphic source includes operating a plurality of graphic sources to retrieve different specification units.

17. A method of providing a trigger to be associated with a graphic in a video stream comprising:

(a) providing graphic data specifying a graphic to be displayed, said graphic data including template data specifying a graphic region of the video screen to be occupied by the displayed graphic, said template data being in a form intelligible to a video graphic generator; and

(b) automatically deriving from said template data an interactive trigger specifying a hot spot responsive to a cursor click in a hot spot region having a predetermined spatial relationship to the graphic region.

18. A method as claimed in claim 17 further comprising the steps of operating a graphic generator to generate the graphic specified by the graphic data and incorporating the graphic in an output video stream, said step of automatically deriving said trigger being performed in response to said step of operating the graphic generator.

19. A method as claimed in claim 18 wherein said step of operating a graphic generator includes the step of operating the graphic generator to retrieve a specification unit incorporating said template data for one or more graphics, graphic content data defining the content of each said one or more graphics, and trigger data specifying one or more triggers associated with one or more of said one or more

graphics specified by the template data and content data in such specification unit.

20. A method as claimed in claim 19 wherein said step of operating a graphic generator includes the step of automatically sending from said graphic generator a message including said template data, said step of automatically deriving said trigger including receiving said message at a gateway circuit separate from the graphic generator and deriving said trigger in said gateway circuit.

21. A method as claimed in claim 17 wherein said interactive trigger specifies a hot spot substantially coextensive with the graphic region.

22. A method as claimed in claim 17 wherein said interactive trigger specifies a hot spot outside of said graphic region but adjacent thereto.